

AMENDMENTS TO THE CLAIMS

Claim 1 (currently amended): A method for oligomerizing producing oligomers having less than 40 carbon atoms using at least one aliphatic olefinic monomer having one carbon-carbon double bond, the method comprising the step of contacting a feed comprising the olefinic monomer under oligomerization conditions with a catalyst composition comprising the reaction product of:

- (a) a compound having a formula selected from the group consisting of $M[S_2C_2(R^aR^b)]_2$ and $M[S_2C_6(R^1R^2R^3R^4)]_2$, wherein M is a late transition metal, R^a , R^b , R^1 , R^2 , R^3 and R^4 are independently selected and may be the same or different and are selected from hydrogen, electron-withdrawing groups and unsubstituted and substituted hydrocarbyl groups; and
- (b) an activating cocatalyst.

Claim 2 (original): The method of claim 1 wherein M is selected from one of Fe, Co, Ni, Pd, and Pt.

Claim 3 (currently amended): The method of claim 1 wherein the compound is selected from the group consisting of bis(dithiobenzil) nickel, and bis[1,2-bis(trifluoromethyl)ethylene-1,2-dithiolato] nickel, and derivatives thereof.

Claim 4 (currently amended): The method of claim 1 wherein the cocatalyst is selected from the group consisting of alkylaluminoxanes, aluminum alkyls, aluminum halides, alkyl aluminum halides, Lewis acids other than any of the foregoing, alkylating agents such as methyl magnesium chloride and methyl lithium and mixtures thereof.

Claim 5 (original): The method of claim 4 wherein the cocatalyst is methylaluminoxane.

Claim 6 (original): The method of claim 1 wherein the contacting is at a temperature in the range of from about 0°C to 100°C and at pressures of from about 15 to 2000 psig.

Claim 7 (original): The method of claim 1 wherein the contacting is conducted in a solvent.

Claim 8 (original): The method of claim 1 wherein the contacting is conducted in a gas phase.

Claim 9 (original): The method of claim 1 wherein said olefinic monomer is selected from the group consisting of ethylene, propylene, butenes, hexenes, octenes and mixtures thereof.

Claim 10 (original): The method of claim 9 wherein said olefinic monomer is ethylene.

Claim 11 (original): The method of claim 1 wherein the catalyst composition comprises a supported catalyst composition.

Claim 12 (original): The method of claim 11 wherein the supported catalyst composition comprises a silica supported catalyst composition.

Claim 13 (original): The method of claim 1 wherein the feed contains contaminants.

Claim 14 (original): The method of claim 13 wherein the contaminants comprise sulfur-containing compounds.

Claim 15 (currently amended): The method of claim 14 wherein the sulfur-containing compounds comprise H₂S, mercaptans, sulfides, and thiophenes and derivatives thereof.

Claim 16 (currently amended): A method for oligomerizing producing oligomers having less than 40 carbon atoms using at least one aliphatic olefinic monomer having one carbon-carbon double bond, wherein the olefinic monomer is from a feed stream having sulfur-containing compounds, the method comprising the step of contacting the feed stream under oligomerization conditions with a catalyst composition comprising the reaction product of:

- (a) a compound having a formula selected from the group consisting of $M[S_2C_2(R^aR^b)]_2$ and $M[S_2C_6(R^1R^2R^3R^4)]_2$, wherein M is a late transition metal, R^a, R^b, R¹, R², R³ and R⁴ are independently selected and may be the same or different and are selected from hydrogen, electron-withdrawing groups and unsubstituted and substituted hydrocarbyl groups; and
- (b) an activating cocatalyst.